

Transportation Studies

Utah Department of Transportation | 09 - 2008

H.B. 108

H.B. 108 Transportation Studies

Adopted in the 2007 General Legislative Session, H.B. 108 appropriated funding and required the Utah Department of Transportation (UDOT), in coordination with Metropolitan Planning Organizations, to complete a study of east-west transportation improvements in Salt Lake, Davis, Weber, Utah and Washington Counties, as well as study the adequacy of the state's transportation planning process.

Highlighted provisions included studying:

- East-west transportation route improvements in Salt Lake County between the 2100 South corridor and the southern end of the county and between I-15 and SR-111
- Construction of one or more limited-access highways
- Improvements to the existing system of arterial highways including whether additional arterial highways should be constructed
- Development of other multi-modal transportation projects

And identifying:

- A minimum of three potential corridors for one or more limited access highways
- A minimum of four potential arterial system improvements or additional arterial highways
- Alternative overpass, interchange and intersection designs for each alternative identified

STUDY AREAS SELECTED

Five studies began in the fall of 2007. The studies determined future transportation needs based on population projections through the year 2040, and developed long-term plans for improvements. Each study is unique and prioritized projects in different formats.

STUDY GOALS

Based on UDOT's strategic goals, known as the "Final Four" (take care of what we have, make the system work better, improve safety, increase capacity), the studies sought to produce long-term planning, as well as build understanding of, and strategies for, future improvements in the study-area communities.

STUDY PROCESS

The studies generally followed three steps:

- 1 Collect data and identify needs
- 2 Analyze and develop alternatives
- 3 Evaluate input to refine alternatives, evaluate and prioritize projects

The result is a recommended transportation package for each study area and with action plans for both short-term and long-term approaches. The proposed improvements are in addition to projects currently listed in the Long Range Plan.

PUBLIC INVOLVEMENT

The bill also required UDOT to hold one or more public hearings to assist in identifying improvements, developing options, and examining whether the current process of identifying and planning for improvements to the existing state highway system adequately meets the state transportation needs.

The study teams made presentations to city officials and stakeholder groups, invited communities to public meetings, developed informational websites, and performed other outreach activities to solicit public opinion on transportation needs. They also provided the public with information about potential solutions. By engaging the public in the process both sides gained a better understanding of transportation planning for the future.

STUDY	UDOT REGION	TEAM
Davis Weber East-West Transportation Study	1	InterPlan Project Team
Salt Lake County East-West Transportation Planning Study	2	Jacobs Project Team
Northern Utah County East-West Study	3	MAG/Lochner Project Team
I-15 Washington County Corridor Study	4	HDR Project Team
Eastern Washington County Transportation Study	4	Lochner Project Team

Davis Weber East-West Transportation Study Summary

INTRODUCTION AND STUDY AREA

To develop a comprehensive transportation network that will serve the residents of north Davis and Weber Counties, the Utah Department of Transportation (UDOT) and the Wasatch Front Regional Council (WFRC) focused on east-west mobility as required by H.B. 108 (2007); however, it was apparent to participants that an east-west and north-south approach to transportation improvements allowed for better mobility and economic development opportunities which would result in an enhanced quality of life for local residents.

PROCESS

To develop the Preferred Transportation Package, UDOT and the consultant team worked collaboratively with members of a steering committee, and two work groups.

PUBLIC INVOLVEMENT

Input from members of the general public was sought during four informational open houses. The study was grounded in technical data as well as public input.

OUTCOME

Potential improvements were created to alleviate current and/or future traffic congestion. Specifically, the consultant team developed near-term potential improvements and a long-term transportation vision for improved east-west mobility in north Davis and Weber Counties. The Priority 1 projects are already in the Long Range Plan, while the entire list of potential improvements informs the next Long Range Transportation Plan, which is required to be updated every four years.

POTENTIAL IMPROVEMENTS

Overall, the potential improvements balance the needs of east-west travel with north-south travel so that long distance trips can be accommodated on a network of multi-functional streets. Residents in the study area will continue to be able to travel at high speeds on new or improved freeways and arterials. Additionally, the potential upgrades improve mass transit and regionally significant trails so as to allow for a choice of travel modes—particularly to employment and activity centers in Salt Lake, Ogden, Hill Air Force Base and other locations.

NEAR-TERM IMPROVEMENTS

Highways

Project		Costs are in Millions*
B22a	SR-67 New six-lane expressway from Farmington to Syracuse Road	\$807
B25	SR-108 Widen to four lanes from Syracuse Road to 1900 West	\$173
B26	Harrison Boulevard Widen to six lanes from SR-89 to 24th Street	\$99
B32	1800 North (Sunset) New construction and widening to four lanes from I-15 to 2000 West	\$48
B33	200/700 South (Clearfield) New construction and widening to four lanes from Main Street to 2000 West	\$70
B36	Antelope Drive New two-lane construction from 2550 E. to SR-89	\$4
B38	200 North (Kaysville) Widen to four lanes from I-15 to SR-67 Extension	\$42
B44	40th Street Widen to four lanes from Adams Ave. to Gramercy Avenue	\$15
B51	Main Street Widen to four lanes from I-15 to 200 North (Kaysville)	\$23
B54	Riverdale Road Widen to six lanes from SR-126 to Washington Boulevard	\$92
F3	SR-89 Widen to six lanes from I-84 to Harrison Boulevard	\$203
F8	Fort Lane Widen to four lanes from Main Street to Gordon Avenue	\$24
F9	700 South (Layton) Widen to four lanes from I-15 to Flint	\$13
F14	3600 West (Layton) New construction and widen to four lanes from Gordon Ave to SR-67	\$28

Interchanges

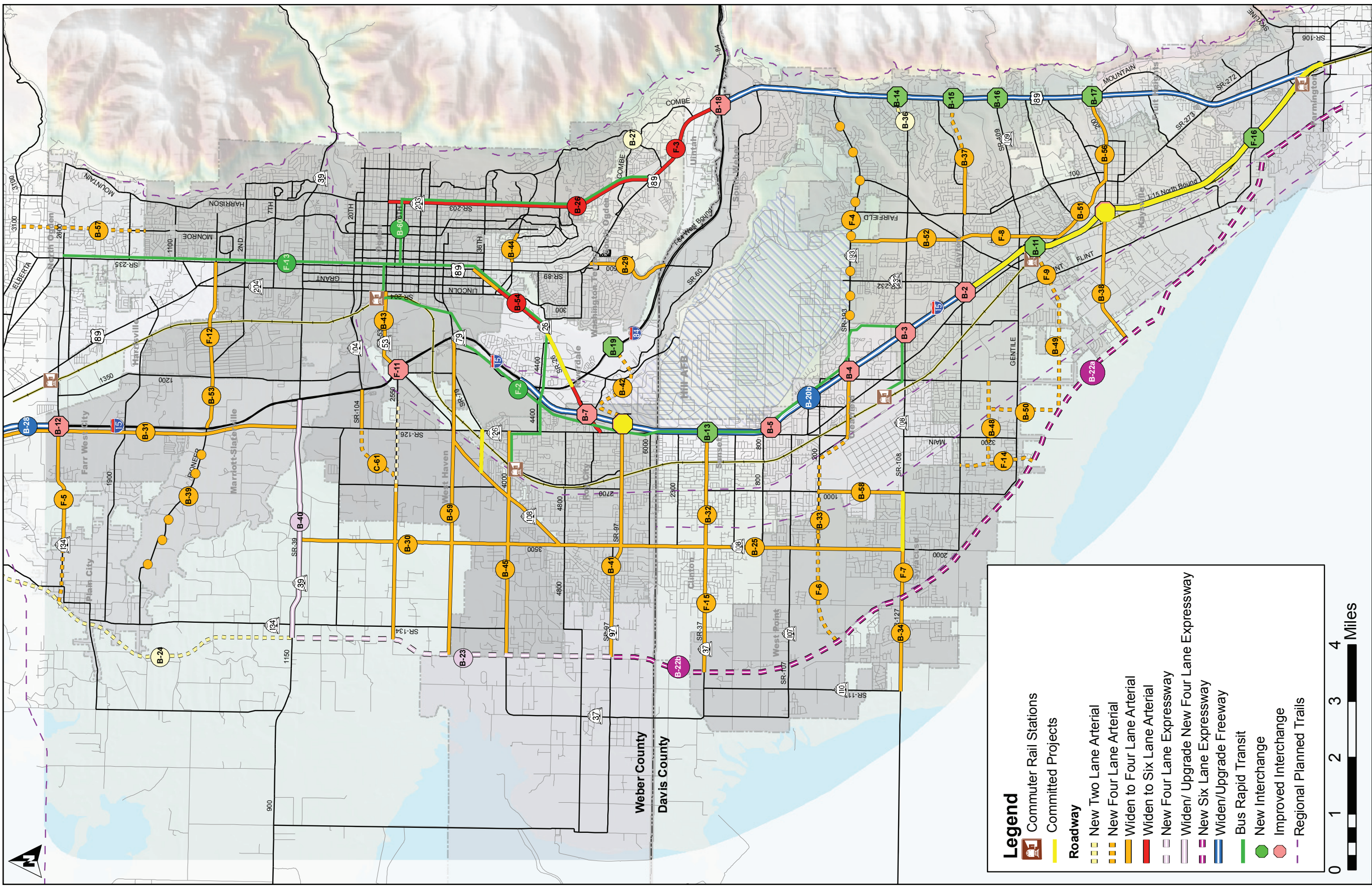
Project		Costs are in Millions*
B2	I-15 Upgrade at Layton Hill Field Road	\$38
B4	I-15 Upgrade at Clearfield SR-193	\$20
B5	I-15 Upgrade at Clearfield 650 North	\$34
B6	I-15 Upgrade at Roy 5600 South	\$34
B7	I-15 Upgrade at Riverdale Riverdale Road	\$35
B13	I-15 New interchange at Sunset 1800 North	\$155

Transit

Project		Costs are in Millions*
B60	24th Street/Harrison Blvd Bus Rapid Transit from Ogden Commuter Rail Station to WSU	\$81

* Costs are planning estimates only, estimated in construction year

POTENTIAL IMPROVEMENTS



Salt Lake County East-West Transportation Planning Study

INTRODUCTION AND STUDY AREA

The study team used data analysis with stakeholder and public feedback to help build options that will improve transportation on the west side of the Salt Lake Valley.

The team analyzed the current transportation system, identified system improvement options, considered challenges related to those options and suggested a timeline that will coordinate with other planned transportation improvements.

The study area runs from the Salt Lake County/Utah County border north to the SR-201 (2100 South) freeway, and from SR-111 east to the I-15 corridor. The planning area continues west of SR-111.

PROCESS OVERVIEW

The study team's first phase was dedicated to identifying needs. This required rigorous data analysis that looked beyond what is already planned in the Wasatch Front Regional Council 2030 Regional Transportation Plan (RTP). In the study's final phases, the team developed, analyzed and evaluated potential transportation improvements and created a final report.

PUBLIC INVOLVEMENT

Public Involvement was an integral part of the study process. The study team met with a Stakeholder Working Group of transportation officials and planning area city officials such as mayors and transportation-related staff throughout the study.

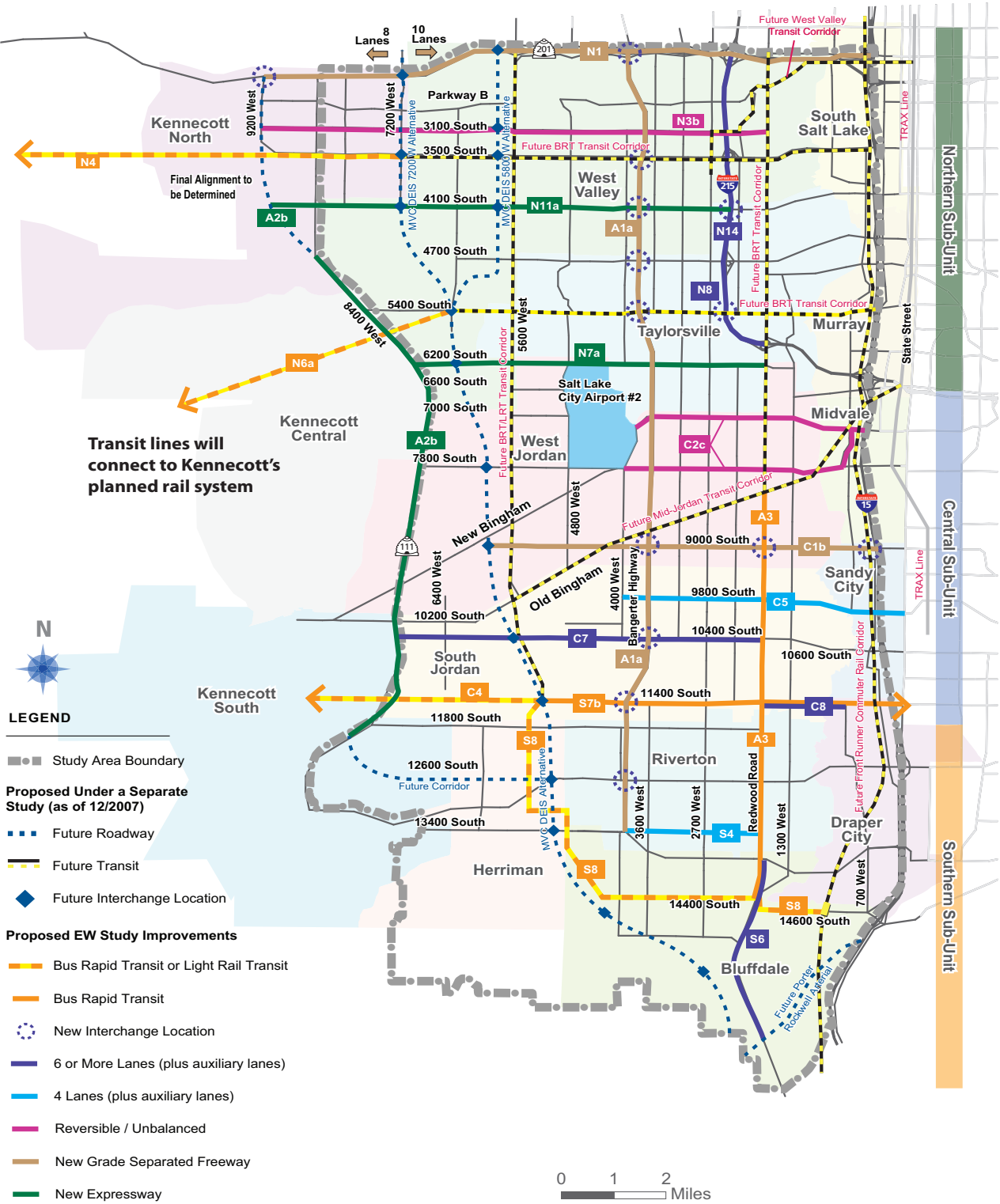
The team also gave presentations to all communities in the planning area at city council meetings and other gatherings, maintained a website, held focus groups and hosted a public review period. Members of the public were able to comment online, by phone, by e-mail and by mail throughout the study process.

POTENTIAL IMPROVEMENTS

The study's system of potential improvements represents a year-long refinement process. After analysis, the study began with three preliminary alternatives they refined with further study and public involvement to a system of potential improvements.

POTENTIAL IMPROVEMENTS

The potential improvements are an addition to the planned improvements included in the Wasatch Front Regional Council's (WFRC) 2030 Regional Transportation Plan (RTP). The map below does not identify all the RTP improvements.

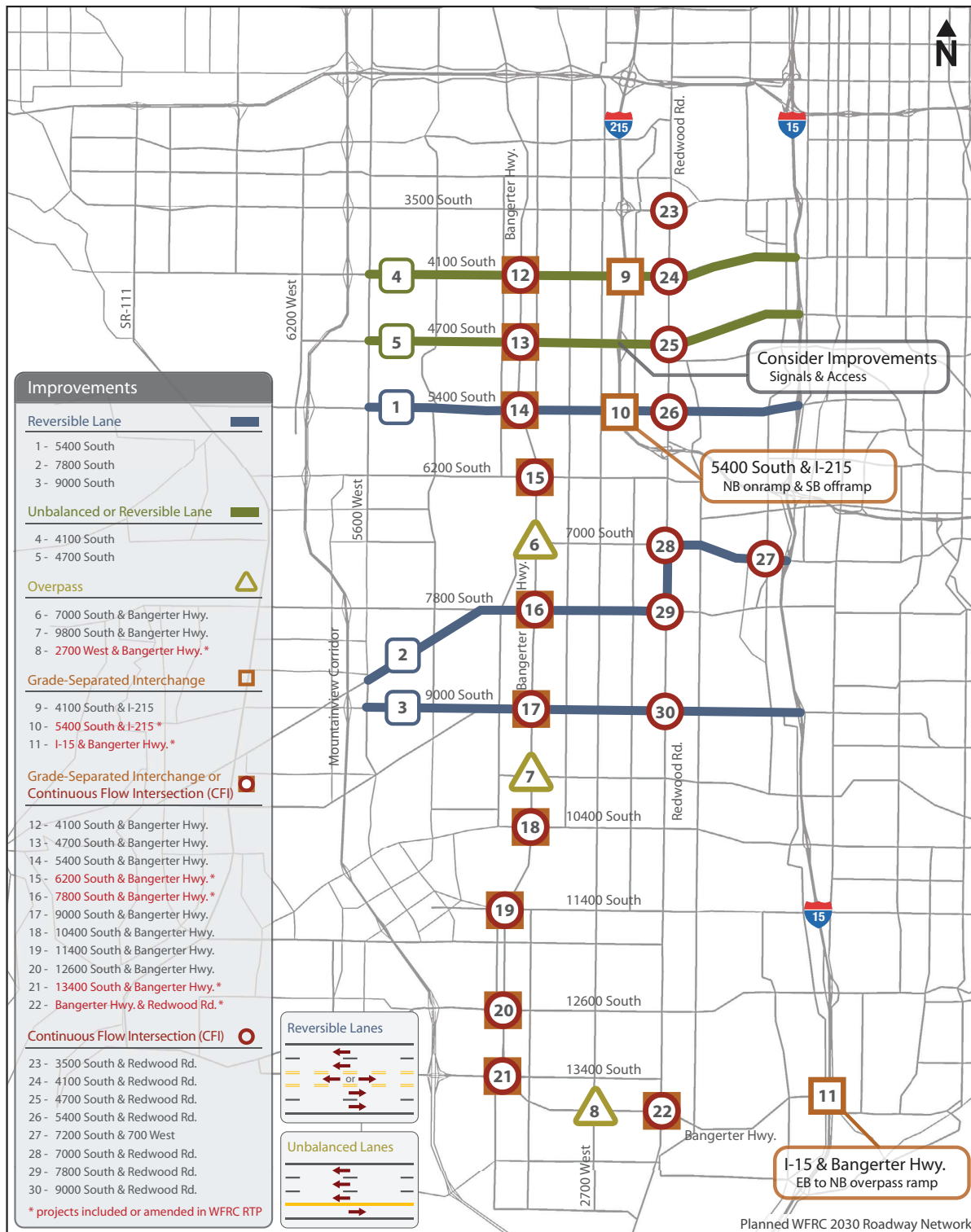


	Improvement	Cost in Millions*
N1	SR-201 Widen to 10 lanes from I-15 to Mountain View Corridor (MVC). Widen to 8 lanes from MVC to 9200 West.	\$2,124
N3b	3100 South Provide a reversible lane to serve peak directional flow from SR-111 to Redwood Rd.	\$42
N4	BRT/LRT-3500 South Extend Bus Rapid Transit (BRT) or Light Rail Transit (LRT) service from 7200 West to connect with Kennecott's planned rail system (extend from proposed BRT in the WFRC's RTP.)	\$26.5
N6a	BRT/LRT-5400 South Extend BRT/LRT from Mountain View Corridor to Kennecott's planned rail system (extend from proposed BRT in the WFRC's RTP).	\$36
N7a	6200 South Convert 6200 South to a 6-lane expressway from Redwood Rd. to SR-111 (limited or no development access, right-in/outs, possible signals at cross streets).	\$316
N8	I-215 Add an interchange at 5400 South.	\$106
N11a	4100 South Convert 4100 South to a 6-lane expressway from I-215 to SR-111 (Interchanges at I-215, Bangerter, and MVC).	\$642.5
N14	I-215 Widen to 10 lanes from SR-201 to Redwood Rd.	\$565
C1b	9000 South Convert 9000 South to a 6-lane grade-separated freeway with a frontage road system from I-15 to MVC (interchanges at I-15, Bangerter, Redwood, and MVC).	\$2,190
C2c	7000/7800 South Provide a reversible lane to serve peak directional flow from I-15 to just west of Bangerter and connect 7800 South to 7200 South near I-15.	\$37.5
C4	LRT Mid-Jordan Line West Extension Extend Mid-Jordan transit line with LRT west from its terminus (11400 South and 5200 West) to Kennecott's planned rail system.	\$181
C5	9800 South Widen to 4 lanes from State Street to 4000 West.	\$121
C7	10400 South Extend and widen facility to 6 lanes from Redwood Rd. to SR-111.	\$157
C8	11400 South Widen to 6 lanes from 700 West to Redwood Rd.	\$51.5
S4	13400 South Widen to 4 lanes from Redwood Rd to Bangerter.	\$51.5
S6	Redwood Rd. Widen to 6 lanes from Bangerter to Porter Rockwell Blvd.	\$51.5
S7b	BRT-11400 South Add BRT from Mid-Jordan line at MVC and connect to proposed extension of north-south TRAX line.	\$130
S8	BRT/LRT Mid-Jordan Line South Extension Extend Mid-Jordan transit line with BRT or LRT south from its terminus (11400 South and 5200 West) to Front Runner station at 14600 South.	\$587
A1a	Bangerter Hwy. Convert Bangerter to a freeway from 13400 South to SR-201. Implement high capacity intersections (e.g. Continuous Flow Intersections (CFI) like at 3500 South and Bangerter) as an interim plan.	\$691
A2b	9200 West/SR-111 Convert proposed SR-111 (final alignment to be determined by separate study) on 9200 West to a 6-lane expressway from SR-201 to SR-111 and widen SR-111 to a 6-lane expressway from 3500 South to 12600 South.	\$1,545
A3	BRT-Redwood Rd Extend BRT from Future Mid-Jordan Transit Corridor to 14400 South.	\$12.5

* Costs are planning estimates only.

NEAR-TERM IMPROVEMENTS

As the system of potential improvements is a long-term plan, the study team created short-term improvements that could be implemented in the interim.



*Estimates are in 2007 dollars

Northern Utah County East-West Study Project Summary

INTRODUCTION AND AREA STUDIED

The Utah County East-West Study area included the Salt Lake County line to the north, Orem to the south, the Eagle Mountain area to the west, and the cities of Cedar Hills and Pleasant Grove to the east.

EASTERN AND WESTERN SUB-AREAS

Due to the contrasting nature of the east side to the west side within the study area, and in order to develop solutions that fit the context of each community, the study area was divided into two sub-areas: eastern and western, with I-15 acting as the dividing line. Results of the travel demand modeling indicated a need for larger, high capacity projects in the western sub-area (i.e. freeways and large arterials) and smaller projects to improve connectivity and functionality in the eastern subarea (i.e. collectors and smaller arterials). These results were also consistent with the transportation facility types preferred by the public.

PROCESS

In addition to the project team, a Technical Committee was developed at the onset of the study, comprised of representatives from the Utah Department of Transportation (UDOT), the Mountainland Association of Governments (MAG), Utah Transit Authority (UTA), State legislators representing areas contained in this study, and planning and engineering professionals from each area city. The committee, which met regularly, provided technical oversight and assisted the project team in developing alternatives.

PUBLIC INVOLVEMENT

In addition to the technical committee, the project team engaged the general public to identify transportation needs and potential solutions. A project website (www.utahcountyeastweststudy.com) was developed to keep the public informed of the project including upcoming events and downloadable project materials. A total of eight public meetings were held during the course of the project to ensure the alternatives that were developed fit into the

context of the community and met the needs of users. A variety of outreach methods were utilized to keep the public informed, including the use of press releases, advertisements, and email updates.

OUTCOME

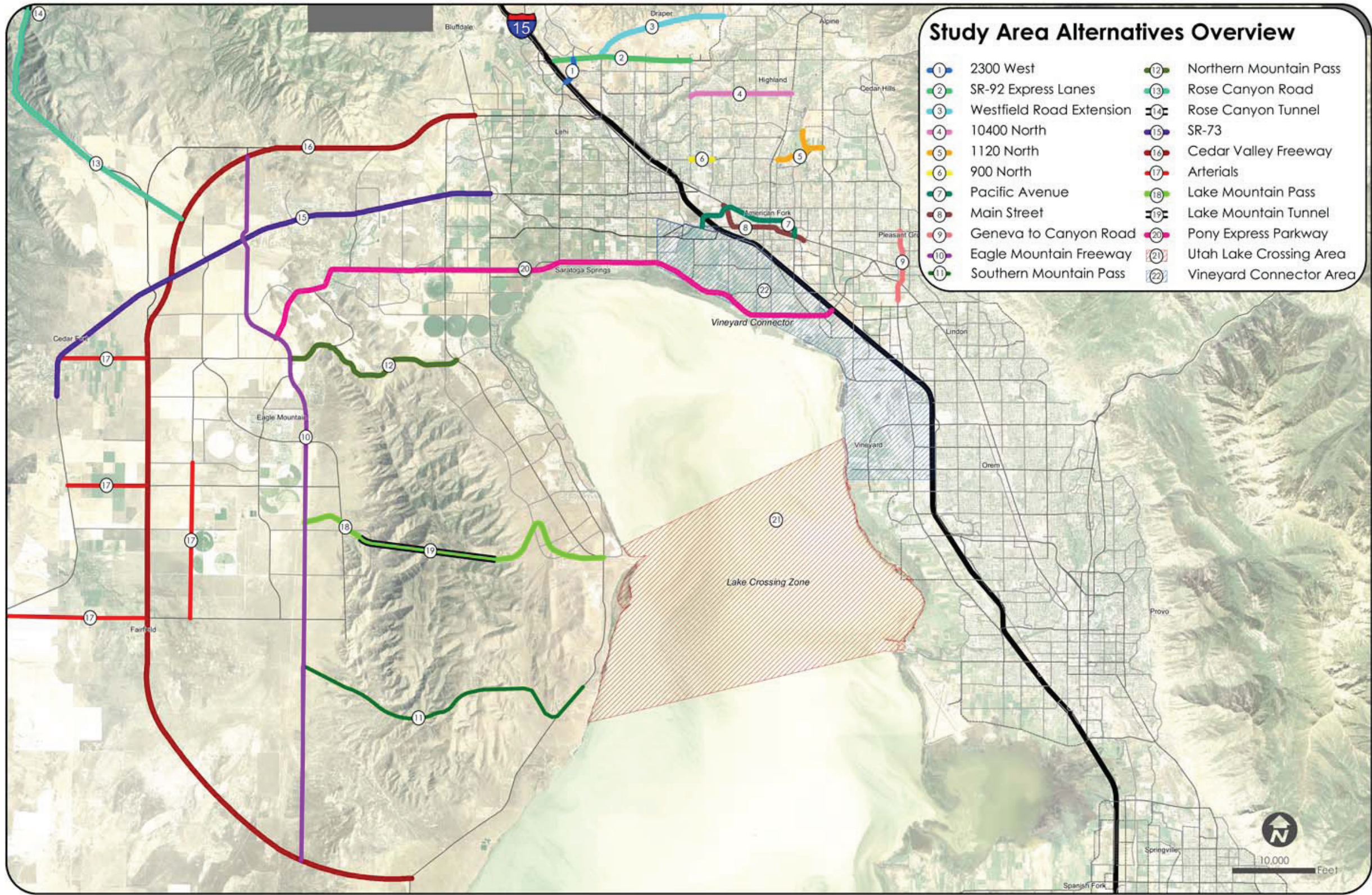
Through the Technical Committee meetings, public outreach, and the analysis conducted by the project team, 23 projects were identified for further consideration: 21 roadway projects and 2 transit networks/intercity connector bus routes. In addition, improvements to existing local bus routes were recommended. These projects, along with their associated impacts and costs (for the year 2008), were presented to the Technical Committee and the public for review and comment. Projects identified:

Eastern Projects	Costs In Millions* (based on 2008 dollars)
Transit Network/Intercity Connector Bus	TBD
2300 West, Lehi	\$6
SR-92 Express Lanes, Lehi	\$46
Westfield Road, Lehi and Highland	\$23
10400 North, Highland: Restriping project	
900 North, American Fork: Restriping project	
1120 North, American Fork	\$11
Geneva Road to Canyon Road, Pleasant Grove	\$16
Pacific Avenue and Main Street, American Fork	Four options ranging from \$157 to \$181

Western Projects	Costs In Millions* (based on 2008 dollars)
Transit Network/Intercity Connector Bus	TBD
Cedar Valley Freeway	\$500
Pony Express Parkway	\$238
Eagle Mountain Freeway	\$371
Eagle Mountain Arterials	\$10 to \$20 each
SR-73, Lehi to Eagle Mountain	\$218
Northern Mountain Pass	\$45
Lake Mountain Pass	\$827
Utah Lake Crossing	TBD
Southern Mountain Pass	\$60
I-6 Freeway Connection to I-80	TBD
Rose Canyon Pass	\$96

* Costs are planning estimates only.

NEAR-TERM IMPROVEMENTS



I-15 Washington County Corridor Study Summary

INTRODUCTION AND AREA STUDIED

The purpose of this study was to identify needs on the I-15 corridor in Washington County (Mileposts 0 to 42) and to identify projects that would meet those needs. Criteria used to analyze the corridor included crash data, geometric conditions, structural evaluations, pavement conditions, and capacity. Environmental resources in the corridor area were also evaluated to help anticipate the level of environmental clearance needed. Individual projects were conceptualized to meet these corridor needs, and are planning-level projects only—not currently included in the Long Range Plan. These projects were then prioritized based on UDOT’s final four: maintain what we have, make the system work better, improve safety, and increase capacity. Priority projects were organized into potential phases, Phase I (2010 to 2015), Phase II (2016 to 2025), and Phase III (2026 to 2040).

PROCESS

Twelve accident clusters were identified in the project corridor. These cluster areas were associated with speed differential, deficient roadway geometrics, and congestion.

Areas of speed differential were related to steep and long grades where climbing lanes would be appropriate.

Geometric deficiencies found throughout the corridor were associated with the following substandard elements: horizontal and vertical curves, vertical clearance, clear zone, guardrail, ramp acceleration and deceleration lengths, and profile grades. Pavement rehabilitation will be needed in the next three to seven years for Mileposts 19 to 42. Current programmed capacity-related projects (Dixie Drive Interchange, Atkinville Interchange, Bluff Street Interchange, and Bloomington Interchange) are providing current and future capacity needs. Traffic analysis identified capacity improvements needed during Phase II and Phase III which includes additional general purpose lanes, additional ramp capacity, and additional interchanges.

PROJECTS IDENTIFIED AND GENERAL COSTS

Table 1 lists each Phase I project, recommended completion year, and estimated construction costs.*

* Costs are planning estimates only.

Table 1: Phase I (2010 to 2015) Projects

Phase I (2010 to 2015) Projects	Recommended Completion Year	Estimated Construction Year Cost in Millions* (Adjusted for Inflation)
Improve South Leads NB Off Ramp Interchange	2010	\$1
Improve Black Ridge and North Interchanges Black Ridge Curve Realignment Improve Ramp Accel & Decel at Exit 36, 40, 42	2011 2011	\$13
Pavement Rehabilitation (MP 34 to 42) Pavement Rehab Improve Clear Zone Hazards and Guardrail Structural Maintenance	2011 2011 2011	\$21.5
Improve Browse Interchange Relocate Northbound Ramp Browse Interchange (MP 30) Improve Ramp Accel and Decel Lengths	2012 2012	\$6
Pavement Rehabilitation (MP 27 to 34) Pavement Rehab Fix Vertical Clearance at Browse Structural Maintenance Improve Clear Zone Hazards & Guardrail	2013 2013 2013 2013	\$26
Improve North and South Leeds Interchange Correct Horizontal Curve at MP 23 Improve Leeds Interchange Ramp Accel and Decel Lengths	2014 2014	\$5.5
Pavement Rehabilitation (MP 19-27) Improve Vert Clearance Struct MP 23.7 Pavement Rehab Structural Maintenance Improve Clear Zone Hazards & Guardrail	2015 2015 2015 2015	\$13.5
Preliminary Engineering for Bloomington to Bluff Capacity Improvements	2015	\$5

Table 2: Phase II and III (2016 to 2040) Projects

Phase	Project Descriptions	Recommended Completion Year	Estimated Construction Year Cost in Millions* (Adjusted for Inflation)
II (2016 to 2025)	Capacity Improvement Bloomington Int. to Bluff St.	2020	\$448
	Bluff St. to Washington Int.	2022	
	Washington Int. to Hurricane	2023	
	Climbing Lane MP 34 to 37	2021	
	Pavement Maintenance High Seal	2022	
	Chain-Up Area MP 30 to 33	2024	
III (2026 to 2040)	Capacity Improvement MP 0 to 4	2027	\$308
	Pavement Maintenance MP 34 to 42, 27 to 34, 19 to 27	2026-2030	
	Climbing Lanes, Deer Fence, Snow Fence	2029-2035	

* costs are planning estimates only

Eastern Washington County Transportation Study Summary

INTRODUCTION

The Eastern Washington County Transportation Study (EWCTS) report provides recommendations for improvements to three transportation corridors: State Route (SR) 9, SR-17, and SR-59. The report also summarizes the existing conditions of the highways, the environmental setting within which the highways are situated, and provides implementation recommendations and cost estimates for the recommended projects.

PROCESS

The corridor study process involved three phases. The first phase focused on gathering information about existing highway conditions, environmental resources in the area, and current land use patterns. In the second phase, UDOT and the Dixie Metropolitan Planning Organization reviewed future population and traffic projections that would affect how the highways function and that would result in the need for highway improvements. Finally, UDOT used the information gathered in the first two phases to complete the third phase, which consisted of identifying a “vision” for the corridors and then developing a list of projects that would help it meet this vision. This study report will focus on the third phase—the improvement project list—but will also summarize the results of the first two phases.

PUBLIC INVOLVEMENT

Public involvement for the EWCTS focused on meaningful opportunities for public and agency participation. The public involvement activities were designed to ensure that the process identified the most important needs and to involve the public and key stakeholders in a manner that facilitated identification of potential transportation solutions.

In general, public involvement activities included opportunities to review materials, one-on-one interviews, and electronic participation opportunities via the study website. Public participation opportunities were augmented by tools that included corridor-wide mailings to up to 1,500 corridor residents, a series of media releases to inform and invite participation at study events, and information distribution on the UDOT website and website of cities in the study area.

OUTCOME

UDOT is currently finalizing the EWCTS improvement project list. It has preliminarily identified 19 projects on SR-9, 11 projects on SR-17, and 10 projects on SR-59. All corridors are in need of passing and turning lanes, rumble strips, clear zone improvements, curve improvements, updated signage, and shoulder improvements. At least three intersections are also in need of some improvements: SR-9 and SR-59, SR-17 and SR-9, and SR-9 and Kolob Reservoir Road.

POTENTIAL IMPROVEMENTS

